PHENIX

TECHNICAL SUPPORT 2011

PHENIX WEEKLY PLANNING

8/18/2011

Don Lynch

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This & Last Week

MuTr Scaffolding Installed and inspected?
BP protection fabricated and installed
IR east 1 ton crane load test ?
VTX/FVTX testing assembly and prep for integration continues
RPC1 Prep continues Work permit approved
Summer Sunday disassembled
MuTr station 2/3 N&S work begun: Confined spaces checked, steps installed in MMS
Evaluate MuID fixturing at 902 for disposition

Next Week

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- Remove MuTr Station 1 north label cables and piping, then disconnect cables and piping
- Remove station 1 north FEE plates and chambers and transport chambers to RPC factory
- VTX repairs/upgrades/reassembly continues
- FVTX assembly continues
- RPC1 assembly & QA testing continues at factory
- Continue cable fabrication, electrical support and assembly for RPC1
- IR west 1 ton crane install & load test
- Continue gas system tasks

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General Tasks 2011 Shutdown

• Work Permits	In Progress
• Start of Shutdown WP	Done
• VTX Removal/FVTX/VTX Installation WP	Done
• RPC1 Prototype and proto absorber removal WP	Done
• MuTr Maintenance and Upgrade WP's (3 WP's Separate WP's for MMN and MMS access)	Done
• RPC1 Installation WP	Done
• PC1 WP	Done
• BBC Removal/Maintenance/Re-installation WP	Done
• End of Shutdown WP	10/1
• IR Crane repairs and upgrade (east done, west later)	In progress
• Remove section of Bridge platform above stat. 1 north	Done
• Remove MMS east vertical lampshade	Done
• Disassemble VTX services	Done
• Remove VTX and transport to Chemistry Lab	Done
• BBC North & South maintenance	Both removed
• Upgrade AH crane	8/15-9/15 ?
• DC/PC1 East/West troubleshooting as required	10/15-11/15
• Undefined detector subsystem maintenance and repairs	7/25-11/7
• Prep for EC roll in, reinstall MMS lampshade	11/28-12/2
• Roll in EC	12/5
• Prep IR for run	12/5-12/9
• VTX, FVTX and RPC1 Services and QA tests (including 4 new racks)	9/16-11/30
• Pink/Blue/White sheets	12/12-12/23
New and upgraded full detector commissioning	9/15-12/31
• Run 12 cooldown	1/1/2012

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VTX/FVTX Tasks

- VTX/FVTX maintenance/upgrade and integration of FVTX onto VTX support structure

• VTX E & W in Chemistry Lab. LDTB test in Chem Lab	Done
• VTX pixel electronics test to start (4-5 days)	Done
• VTX Disassembly into 1/2 barrel layers starts. Hirose connector inspect	Done
• FVTX Interconnect cables all available	75% accounted for
• VTX LDTB spares available	Done
• Spiro boards removed ready to ship for repair	Done
• Hirose connector fix	8/9-9/5
• 6 FVTX ROCs available	8/31
• VTX spare pixel ladder at BNL. Ladder install starts. Physics lab	9/5
• FVTX, 1st 1/2 cage available. 1/2 cage system test in	9/12
• FVTX Remaining ROC boards at BNL	9/15
• JPS Meeting	9/16-20
• FVTX 1/2 cage install in VTX @ Chem lab. 1/2 cage + VTX ladder test start	9/19
• FVTX all 1/2 cages ready	9/22
• VTX+FVTX final installation to start	9/26
• Final VTX+FVTX Survey in Chem Lab	9/28-10/3
• VTX+FVTX ready to move to 1008	10/7

- VTX/FVTX Installation at 1008

• Build 2 FVTX racks	7/1-9/15
• Install VTX/FTX, Re-connect VTX services, Install FVTX services, survey and QA tests	10/17-10/28
• VTX/FVTX Commissioning & Contingency	10/31-12/31

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MuTr North Station 1 work

• Install access (Sta. 1 work platforms & CM west side hanging platform)	In progress
• Remove 1 section of bridge (1 week) (CAD Techs)	Done
• Disconnect Cables, hoses etc, ID/label all (1 week)	In progress
• Remove FEE plates and chambers (1 week)	8/22-9/2
• Station 2 Maintenance/upgrade through access opened by station 1 removal (3 weeks concurrent with next task)	9/2/-9/23
• Clean/install new parts and upgrades (MuTr (3 weeks, concurrent At RPC Factory)	9/2/-9/23
• Re-install chambers and FEE plates (1 week)	9/26-9/30
• Re-cable, re-hose and test (3 weeks)	10/3-10/21

MuTr North & South Station 2 & 3 Re-cap clamps

(No internal work platforms to upper octants)

• CAD Techs to remove MMS east vertical lampshade-	Done
• Install new capacitor clamps and terminators in lower octants	7/25-12/31

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RPC Tasks

• Remove RPC1 prototype and prototype absorber	Done
• Procurement and Assembly at RPC Factory	In Progress
• Pre-survey RPC1's at factory (2 weeks, 1 each for n & s)	7/25-8/12
• Build 1 new rack, upgrade existing RPC1 prototype rack	7/25-8/12
• Install north RPC1 (including north rack & services) (3 weeks)	9/6-9/23
• HV Tests, gas system calibration	9/23-10/14
• Move Station 1 work platforms to south station 1	10/17-10/28
• Install south RPC1 (including south rack) (3 weeks)	10/31-11/11
• RPC1 north and south commissioning	
• RPC3 HV Distribution modifications, gas distribution modifications, PS calibration HV and services testing	9/6-11/30

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Electronics Group Tasks

2011 Shutdown

• RPC1 HV cables & HV boxes & Racks	*cables terminated & ready for installation.* **Boxes & racks ready for ass'y**
• RPC3 additional HV boxes	**Ass'y in progress**
• CMT3 and CMT4 FVTX rack design and assembly for installation on the bridge	*Design in progress*
• FVTX Bias cable assemblies	
◦ 48 eight pair #22AWG. 1680 ft total	*Ready to be sent out for bid*
◦ 384 RG-174 cables terminated with CPC and MMCX R/A conns. 1500 ft total	*Received?*
• Purchase and install FVTX LV cables	
◦ Wedges: 96 eight pair #22AWG terminated in DF11 conns. 3400 ft total	*Received?*
◦ ROCs: 24 twelve pair #16AWG terminated in TYCO 2-106527-4 conns. 900ft total	**Cable is here**
• All FVTX fiberoptics specify, purchase and install	*MTP trunk here. Slow Controls fiber and patch bay on order*
• FVTX LV output mapper boards	*Finished and installed in boxes ready to be rack mounted*
• PbSc teminator board production	*Terminators are here*
• MuTr station 1 capacitors	*here*
• West carriage ADAM system performance upgrade	*Purchased a couple of Ethernet ADAMs for testing. Now testing a MODBUS server*
• Complete the GL1 6X1 Multiplexer assemblies and test	*Layout stage almost complete*
• LeCroy HV control retrofit testing	*Still Waiting for documentation from Debrecen Institute*
• Design/Install FVTX Interlock system.	*Paul with some input from Steve and John. Design and development in progress*

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Miscellaneous Gas System Tasks

• Insulation for stainless steel lines feeding VTX	7/1-12/31
• Redo bypass line on VTX/FVTX spare chiller to remove kink	7/1-12/31
• Clean VTX/FVTX chiller reservoirs	7/1-12/31
• Move RPC R134A tanks nearer to GMH, install cover, insulated lines	7/1-12/31
• Modify RPC3 tunnel manifolds (north and south)	7/1-12/31
• Replace MuTr flowmeters (north and south)	7/1-12/31

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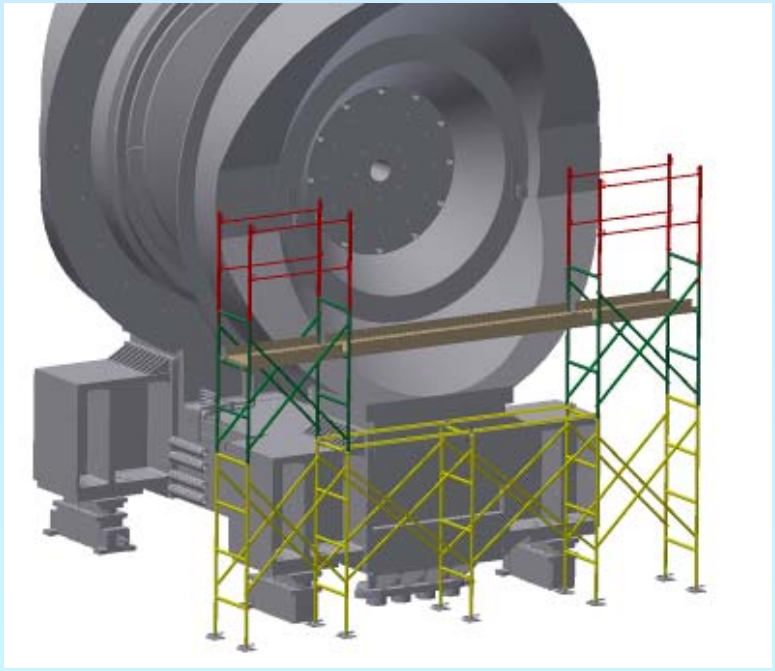

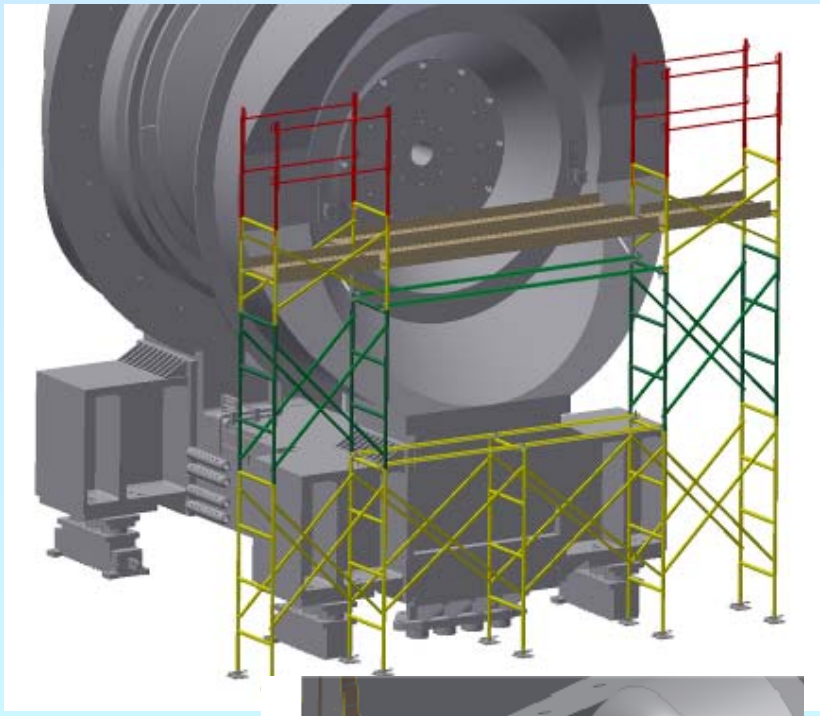

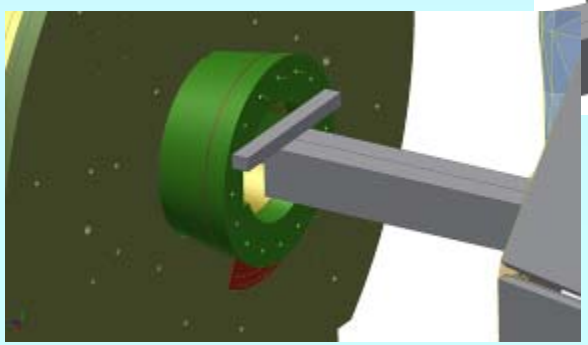

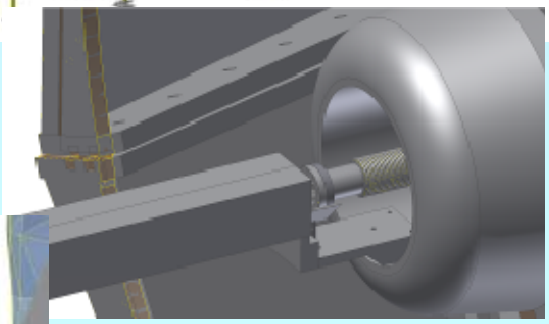

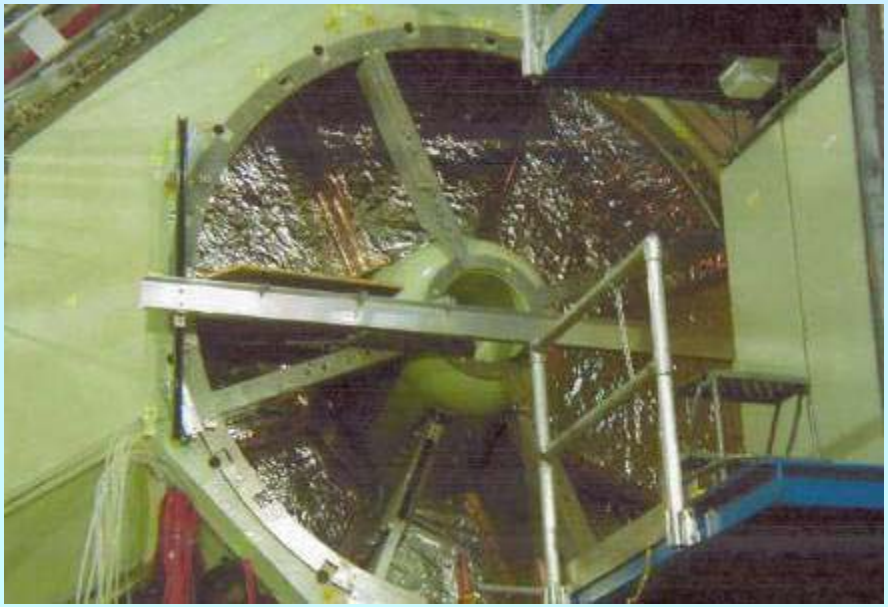

Station 2 access (MMS shown
MMN is similar)

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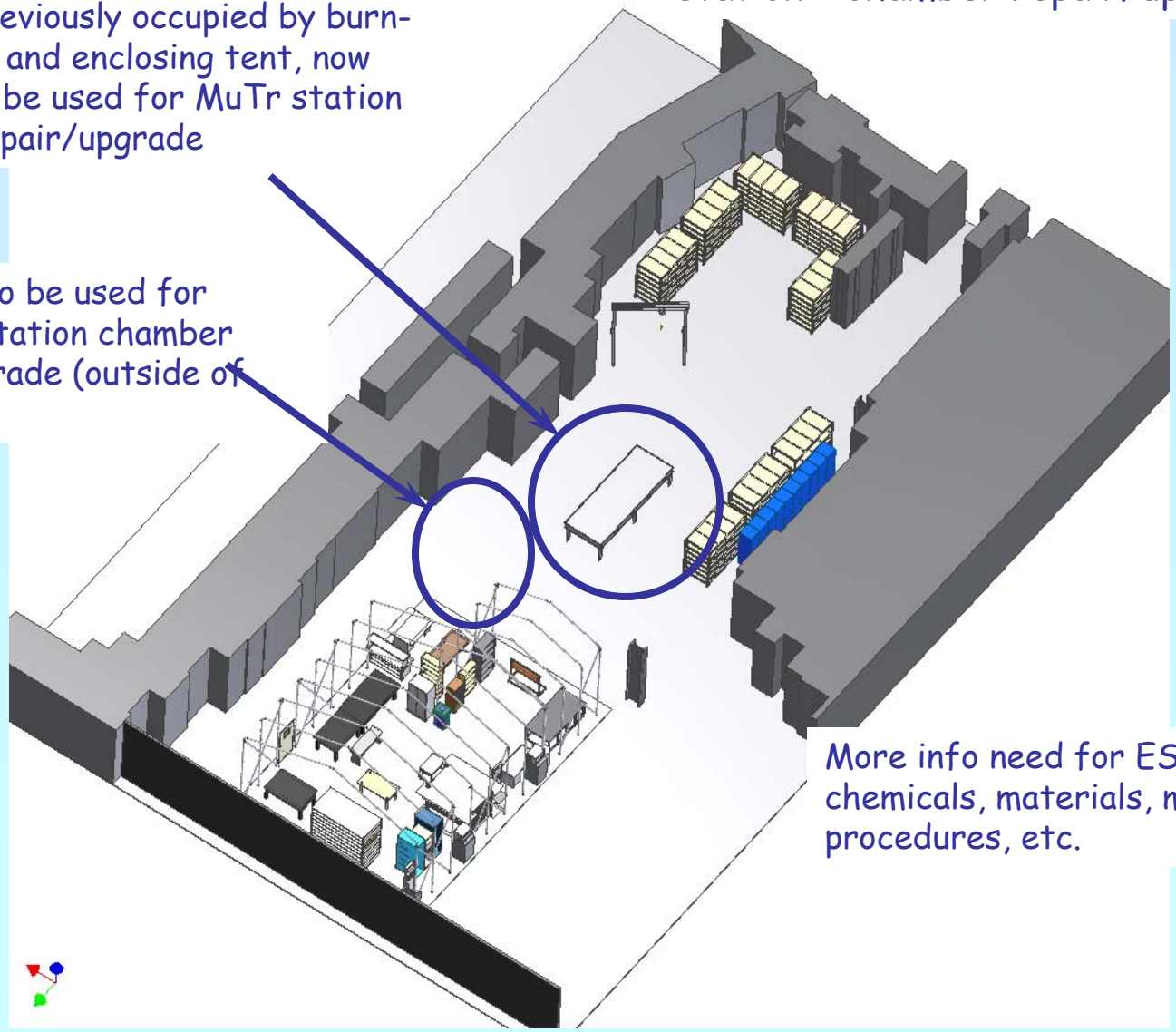
RPC Factory site to be utilized by both RPC1 fabrication/testing and MuTr station 1 chamber repair/upgrade

This area (previously occupied by burn-in test stand and enclosing tent, now just tent) to be used for MuTr station 1 chamber repair/upgrade

This area to be used for soldering station chamber repair/upgrade (outside of tents)



More info need for ESRC: chemicals, materials, methods and procedures, etc.

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VTX

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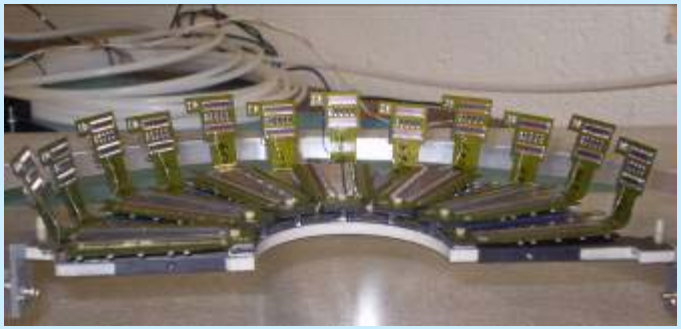
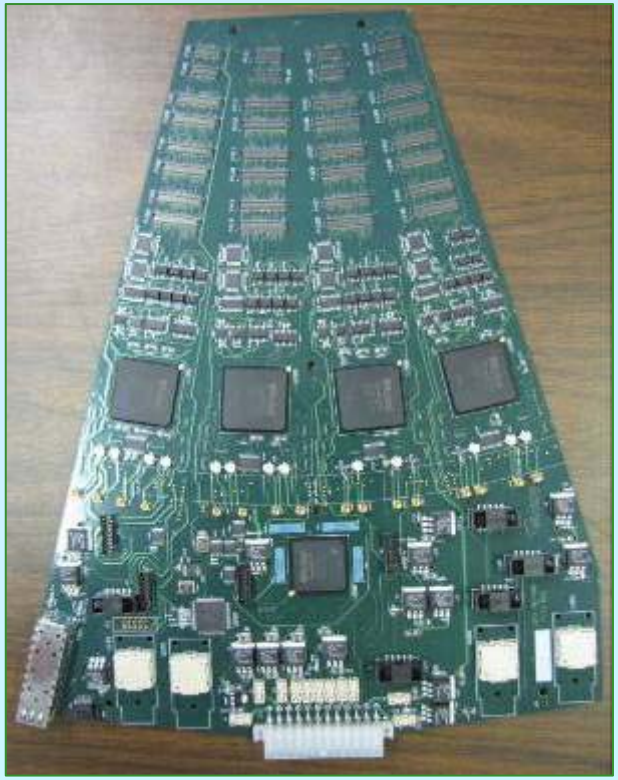
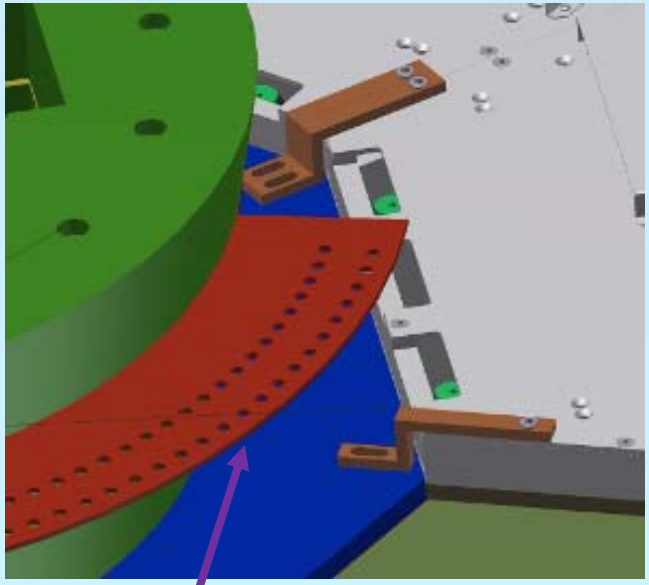


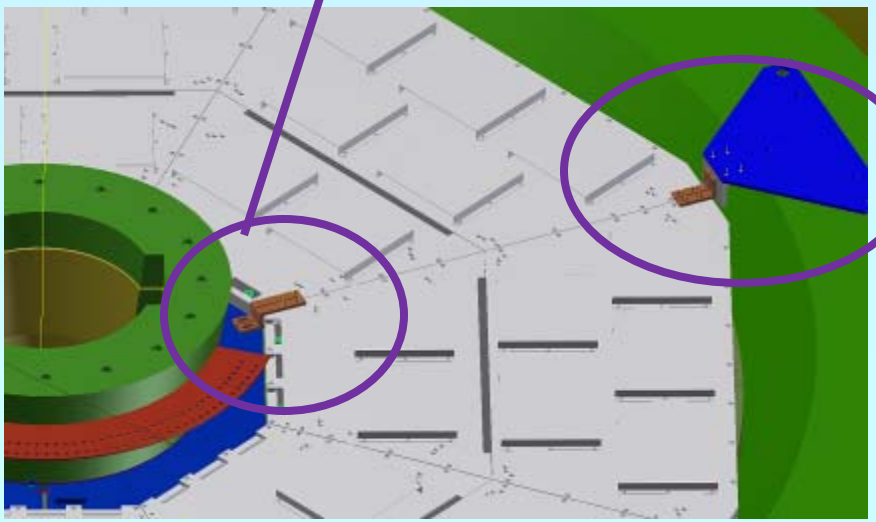


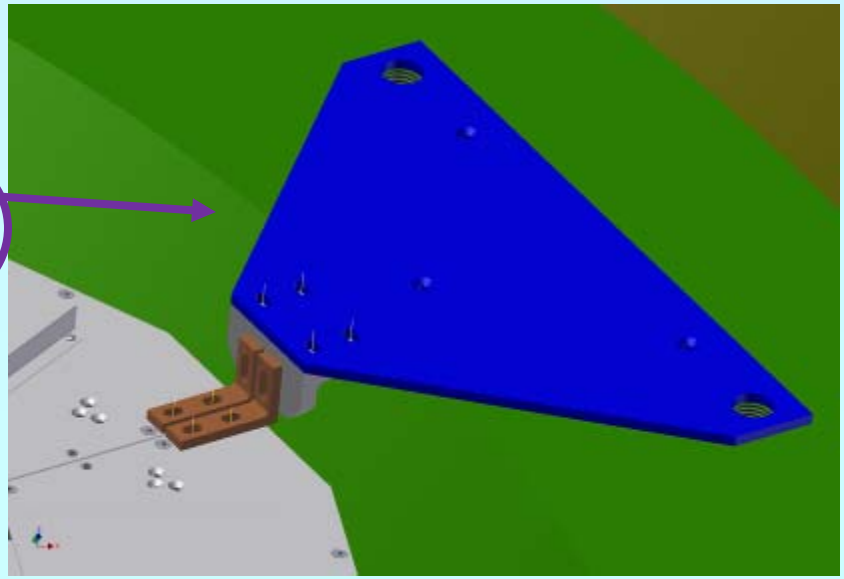
FVTX

RPC1 Mounting Concept



Octants are individually mounted then tied together and supported at the outer octant boundaries by brackets mounted on existing tapped holes, and on inner edges by rings which wedge against the flower pot lead liner. Tapped holes in 8 places on each octant are used both to mount the absorber section and to attach the mounting brackets.





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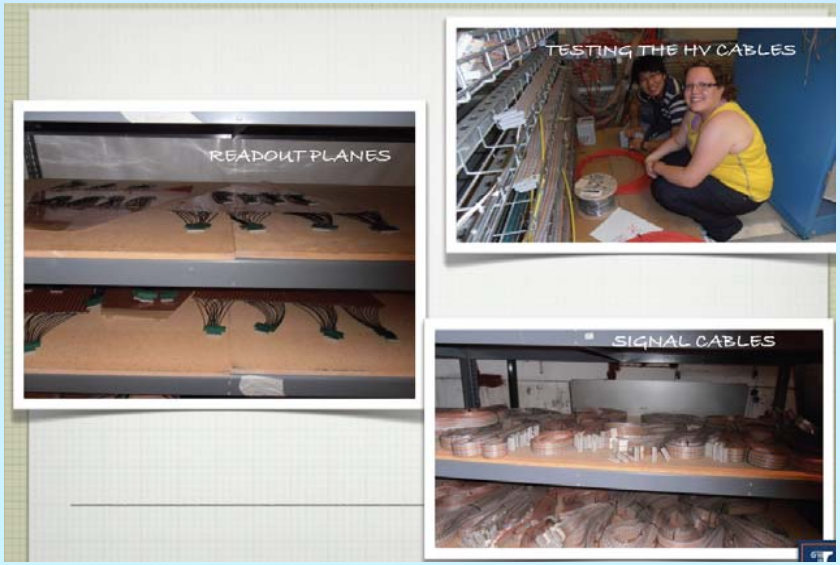

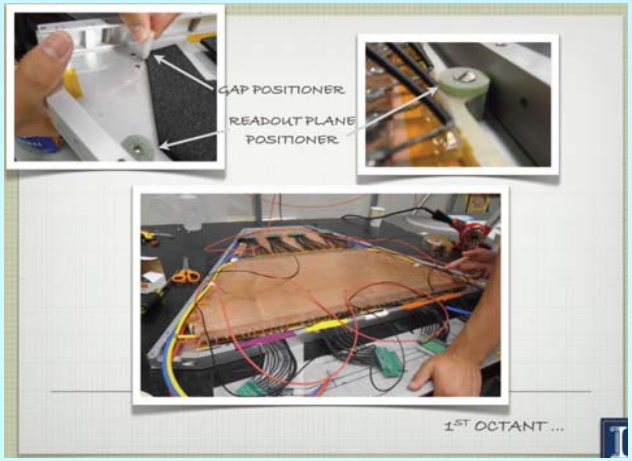

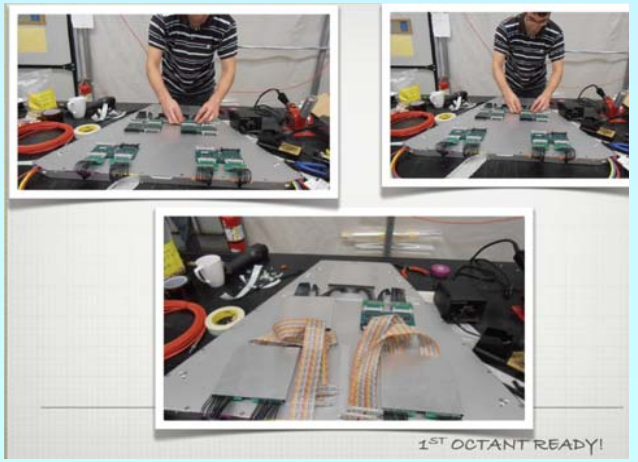

RPC1 Assembly Progress

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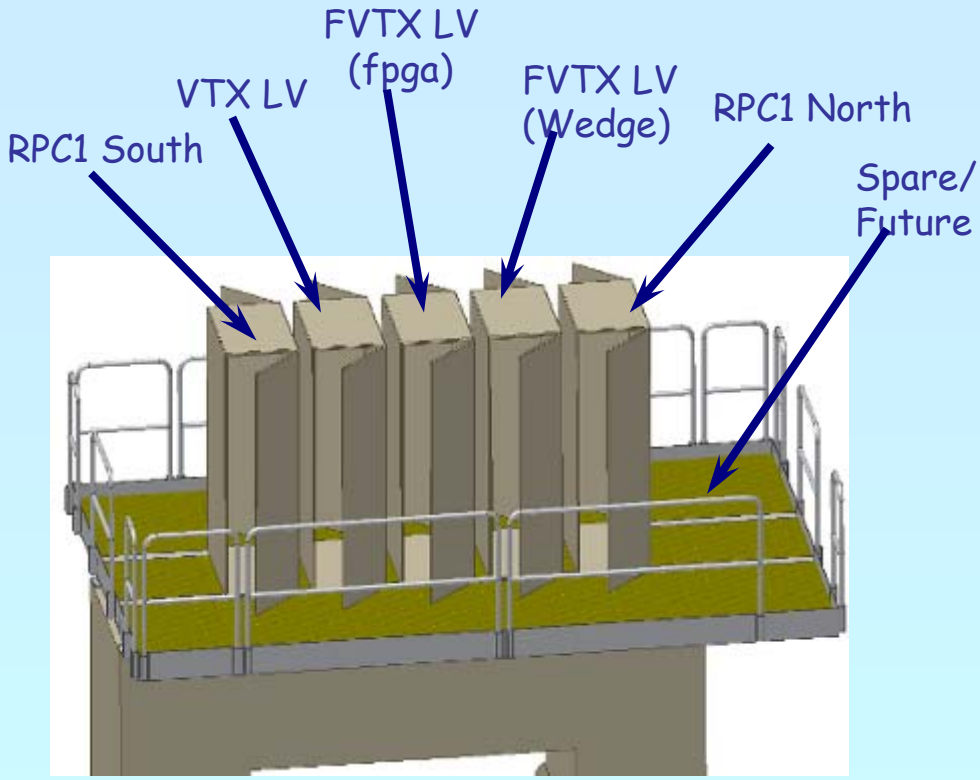

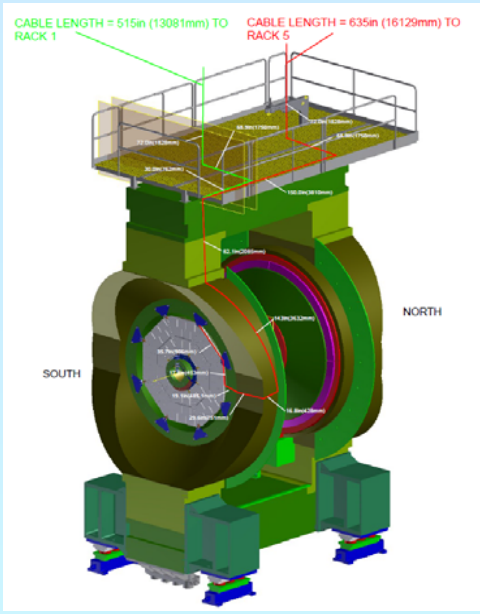

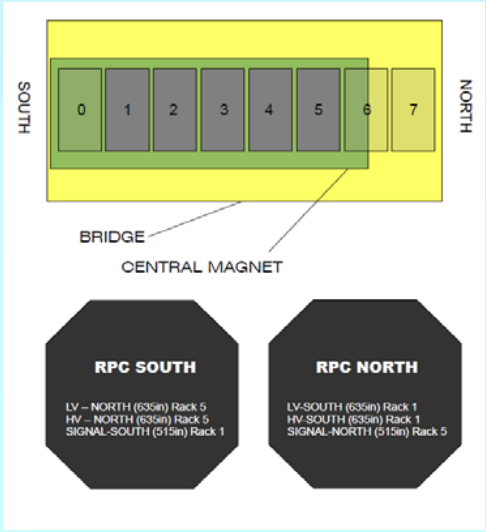

2 new racks to be added for FVTX, 1 new and prototype upgraded for RPC1. All racks will be equipped with standard PHENIX heat, smoke and water leak detection.

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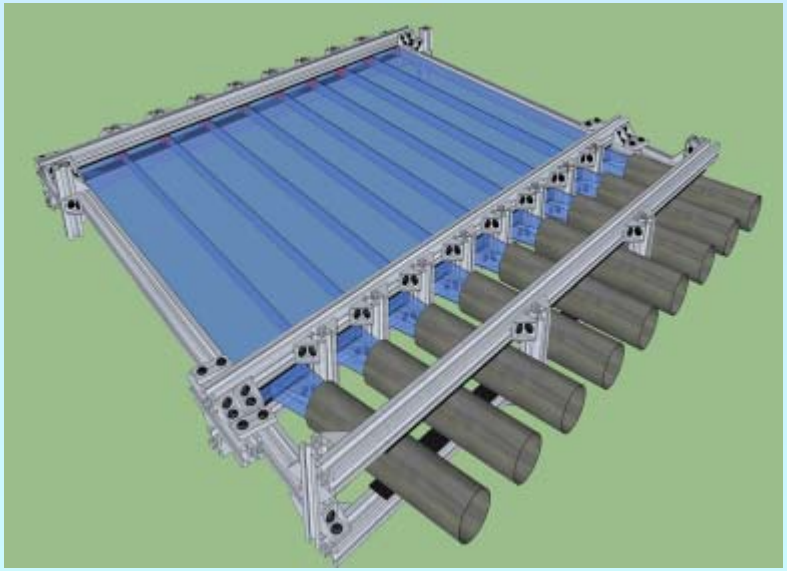
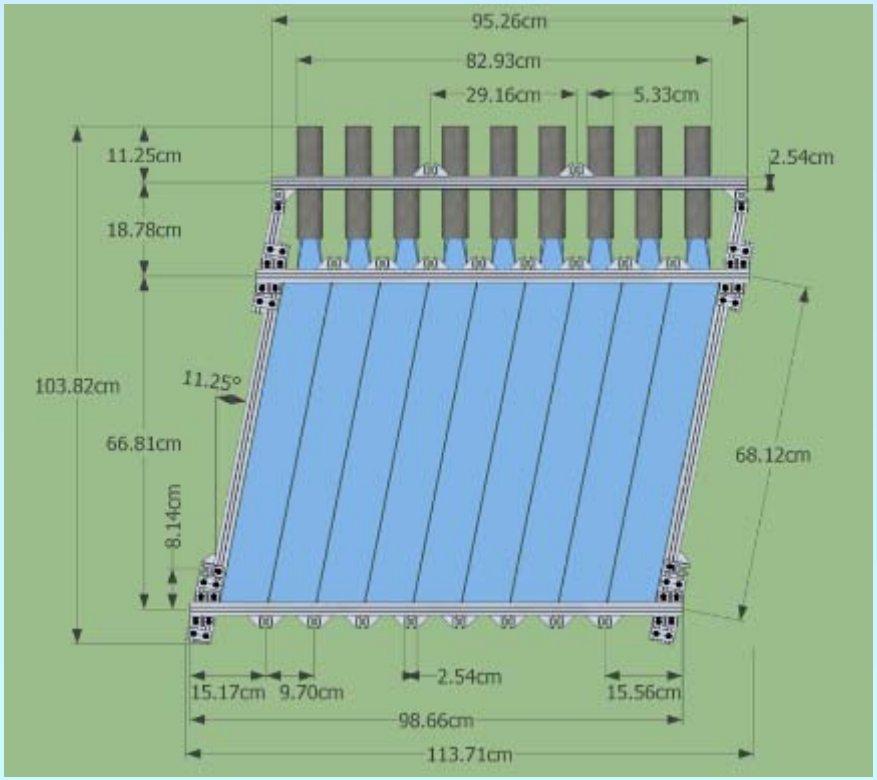
Hodoscope Design

Design by Daniel Jumper (UIUC)

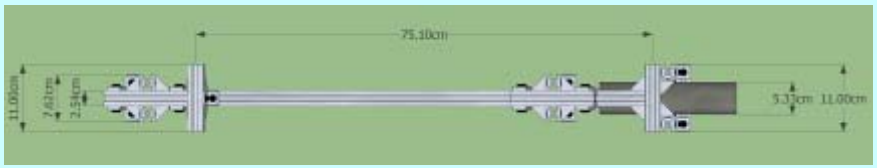


Hodoscope 3D View

9 Scintillators + 9 PMTs



Front View



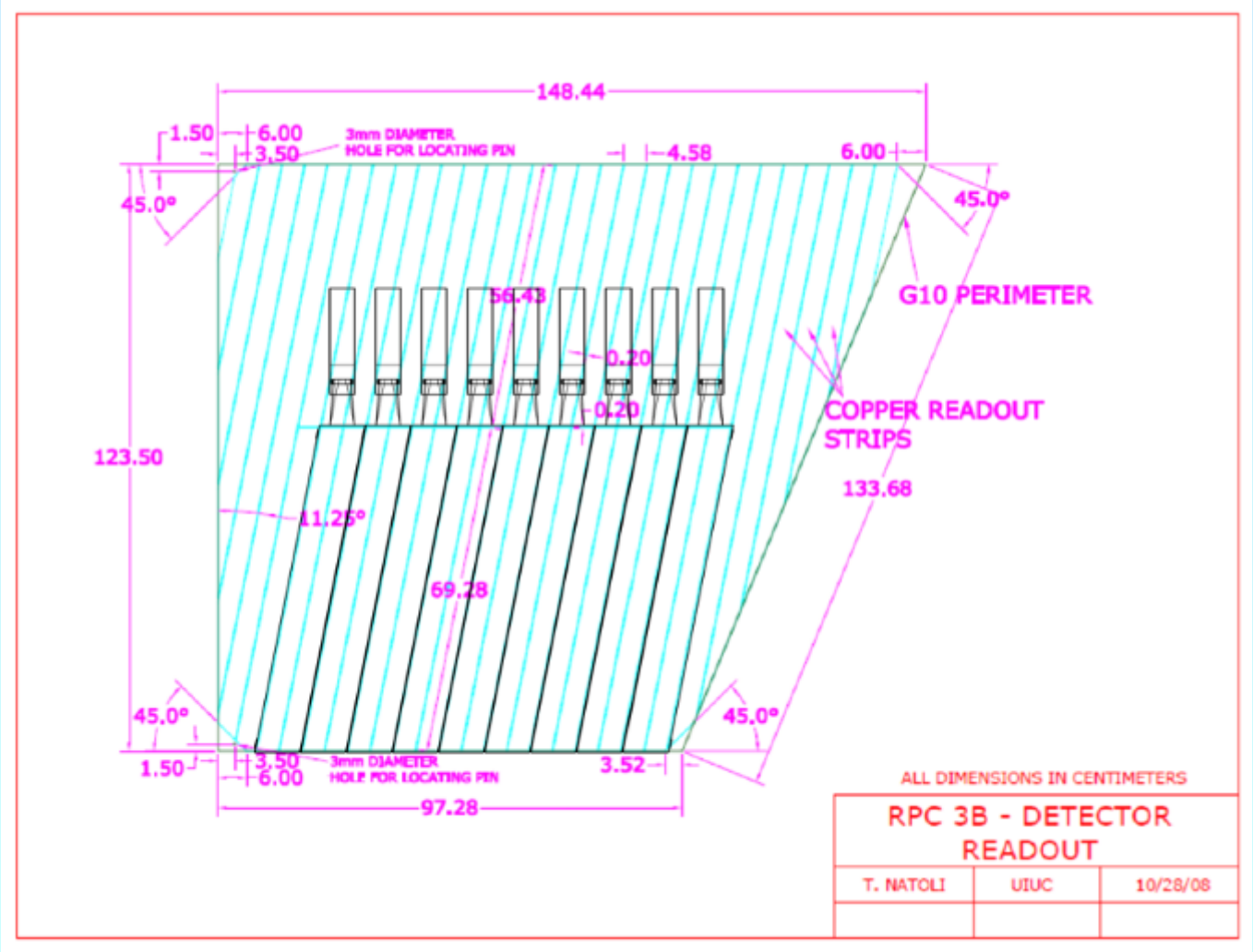
Side View

Size : 96 x 103 x 11 cm
Weight : ~ 73 lb
Readout : Using existing RPC electronics in the tunnel

From IhnJea's DC slides

Hodoscope Layout, matching to RPC3 B module

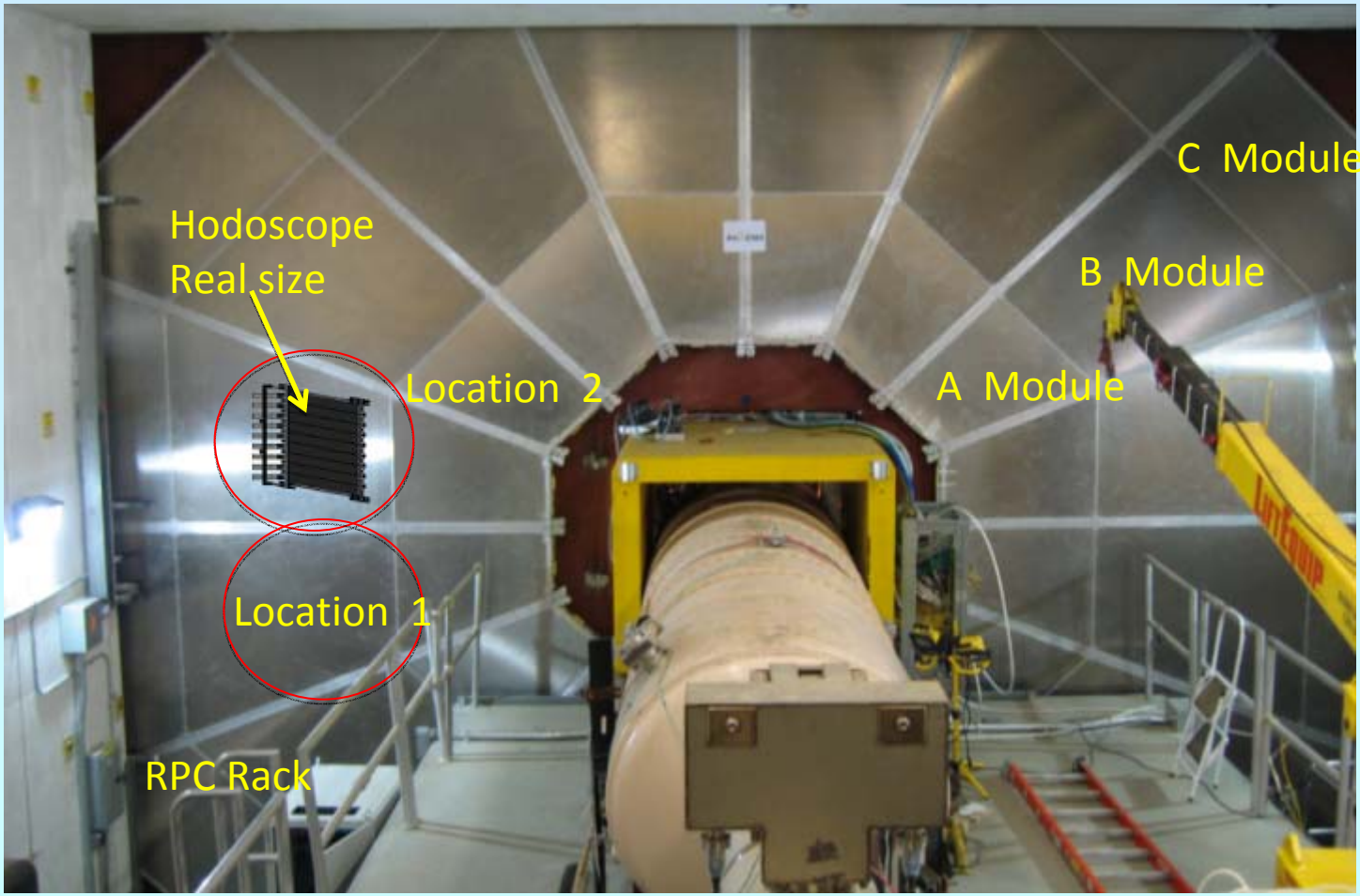
Drawing by Daniel Jumper (UIUC)



From IhnJea's DC slides

Layout of Signal strip of B module + Layout of Hodoscope

Location of Hodoscope



Close to RPC3 electronics rack
Less Beam background region

Location 1 or 2 would be good position

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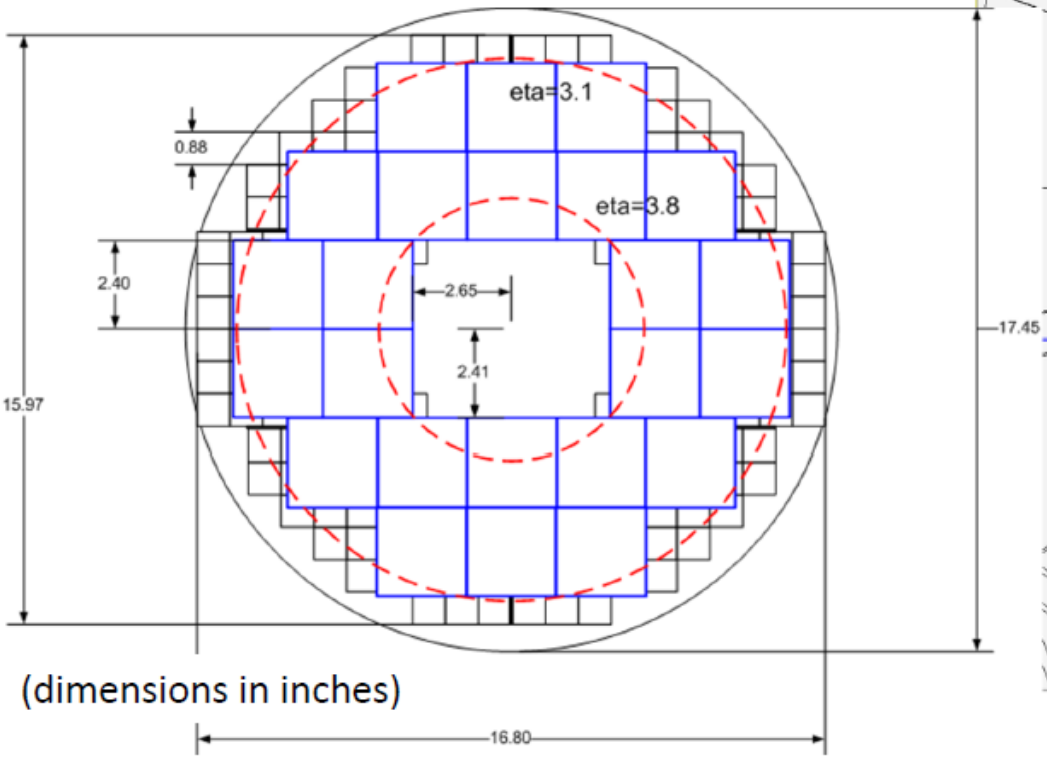
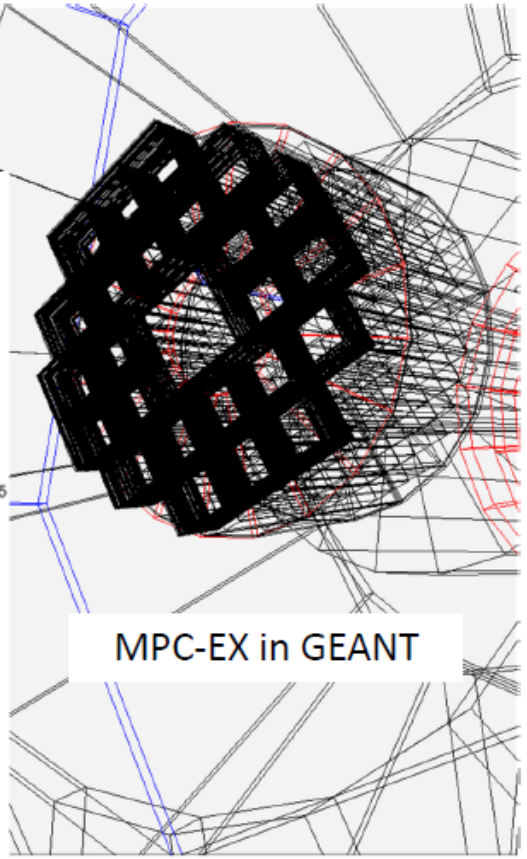
Need shed for R134A bottles close to GMH.
No heating in shed (except heating blankets), lines to be insulated. Last year heating blankets kept gas warm but long length of pipe allowed gas to liquify on coldest days.

Possible location for shed 8' deep with 10' x 8' doors, and with bottom and top openings.. should satisfy ODH issues ~$2K.

Design of the MPC-EX

Detector is designed around 6.2cm x 6.2cm modules (Si pad or strip detectors) separated by 2mm tungsten plates.





From John LaJoie's DC slides

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- Roof leaks in utility bathroom at northwest corner behind tech offices, over door between rack room and assembly hall, over door between control room and elect. ass'y room, southeast corner of IR and laser room.

- Flooding in AH/ Driveway heaving

- Electronics test/assembly room-to-parking lot door (does not open/close/lock properly – needs to be replaced)

- Temperature in utility hall (where new air compressor is installed) is exceedingly high (transformer cases as high as 135 F)

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PHENIX Procedure Review Current Status:

147 Procedures Identified

87 Made Inactive (not currently in use, will require revision to re- activate if and when necessary, available for reference purposes)

9 CAD procedures relevant to PHENIX, all are up to date and available on the CAD web site

43 PHENIX approved procedures.
all are current and up-to-date

9 Proposed/Draft Procedures (never previously formalized) (3 are ready for review) These will be addressed during next few months.

Web retrieval of latest procedures now available from PHENIX Internal:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_procedures.htm

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Safety, Security, Etc.

1. CAD ESRC Safety Review Action Items:

- Provide the latest schematics of the new FVTX readout boards to assure compliance with the agreement on fusing (Boose July 30, 2011)
- Review all new power supplies are NRTL equivalent compliant and affix respective labels (Giannotti July 30, 2011)
- Provide the new flammable gases leak rates for the new and re-installed systems as part of the PHENIX turn on plans (Pisani Dec 15, 2011)
- Review and approve any conformal coating and chemical treatments for Muon Tracking chamber repair (Lynch-Cirnigliaro July 15, 2011) - Done
- Related items for this shutdown
- A plan for the RPC and Muon shielding upgrade inside the Nort anfdSouth Tunnels (Phillips)
- Better access to the PHENIX A/C systems in the IR (Phillips)

Safety, Security, Etc.

2. From Ray Karol:

   In an effort to account for all sealed sources in use at the Collider-Accelerator Department, you are requested to inspect your areas for any new unregistered sealed sources and submit an updated inventory of them to the C-AD Sealed Source Custodian, Peter Cirnigliaro at x5636 in B911A.

   The inventory update should include isotope, activity, serial number, and laboratory bar code number if available. As always you should always notify Peter when a sealed source is brought into or leaves the work area any time of the year.

   This will ensure that we satisfy DOE and BNL requirements for sealed source controls.

Where To Find PHENIX Engineering Info

This is what Happens when you rush. Take the time to work safely

Links for the weekly planning meeting slides, archives of past meeting slides,long term planning, pictures, videos and other technical info can be found on the PHENIX Engineering web site:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm